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APPENDIX E

THE NATIONAL INCOME ACCOUNTS: FUTURE DIRECTIONS OF RESEARCH
AND SUGGESTIONS FOR IMPROVING THESE BASIC DATA

Statement prepared December 1956 by George Jaszi, Chief, National Income Division, Office of Business Economics, U. S. Department of Commerce

PART I. FUTURE DIRECTIONS OF NATIONAL INCOME AND RELATED
RESEARCH

The following statements on the future directions of national income and related research (pt. I) and on data improvements (pt. II) have been prepared in response to the request of the National Accounts Review Committee.

Let me say at the outset that I welcome your forthcoming review of our work. It will be useful to formulate and to direct public attention to the major problems with which official national income work in the United States is faced.

One of these problems—a very practical one—I should like to flag now and discuss in some detail later. There is widespread agreement as to the basic importance of national income estimates, and an urgent demand for improving their accuracy and for extending their scope. Yet—if I may generalize—there has in the last decade been no significant addition to the quantity or quality of the primary statistical data that are the raw materials of national income estimates. Also, over the same period significant reductions have been made in the funds available to the Office of Business Economics and its National Income Division, which shape these raw materials into final form.

I. WRITTEN DESCRIPTIONS OF NATIONAL INCOME WORK

Needless to say, you will have the full cooperation of the National Income Division in your review. It may be helpful if I draw attention to the extensive material relating to our work that is available in written form; this material should facilitate your proceedings.

1. *Published material.*—As you know, the Survey of Current Business not only carries our regular estimates, but also analyzes these data as well as newly developed estimates not—or not yet—incorporated into our established series. In particular, I want to draw your attention to the special studies we prepare, such as that of corporate profits in the January 1956 issue of the Survey and that of manufacturing investment in the current November issue. These studies are part of our output, in addition to our regular monthly, quarterly, and annual series and the analyses that are based on them.

The definitional and statistical foundations of our work are described in detail in the National Income and other supplements to the Survey of Current Business. In addition, last year's sessions of the Conference on Research in Income and Wealth afforded me an opportunity to prepare a detailed paper in which I discuss the major conceptual problems of national income accounting as I see them, and the general lines along which future work might proceed. Also available is a document prepared by the Office of Business Economics

entitled "Program Statement for the Office of Business Economics, United States Department of Commerce" in which some of the same ground is covered.

You will note that my paper for the income conference was written in a personal rather than an official capacity. The same qualification attaches to the status of the following remarks. I have, of course, done my best to write responsibly, but my statement has not undergone official clearance.

2. *Supplementary information.*—Part II of this memorandum relating to major deficiencies and improvements in the data underlying our monthly, quarterly, and annual series should, together with the documents previously mentioned, provide a reasonably full description of the concepts and methods underlying the present national income statistics, and the vistas of progress we can discern.

You will note that our income-size distribution and State income estimates are not covered in the memorandum on data gaps and improvements. We shall be glad to furnish supplementary statements on these two topics if and when you take them up.

All we have published relating specifically to the methodology underlying our monthly and quarterly series are brief notes in the Business Statistics supplement to the Survey. But with only a few significant exceptions the sources we use for our less than annual series are those used for our preliminary annual estimates described fully in the National Income supplement. Apart from these exceptions, all that is missing is a detailed written account of the estimating procedures specific to monthly and quarterly, as distinguished from annual, estimation. I hope very much that you will be able to dispense with such a description. Given our present staff and workload, I would find it quite impossible to provide. But, needless to say, we are available to furnish whatever specific information relating to these methods you need.

You will note that I have not prepared a statement of the requirements for additional primary data that would stem from various possible extensions of our work. The memorandum submitted is confined to the statistical improvement of our existing series. This limitation suggested itself strongly because the field of possible extensions is large and our knowledge of the connected data requirements is naturally incomplete. However, when you are ready to consider extensions of our work we shall be glad to provide you with the information on associated data needs that is necessary to evaluate the projects. I might add that these needs will vary greatly from project to project.

We shall, of course, also be ready to furnish further detail relating to aspects of our work that are covered in the written material.

II. BROAD DIRECTIONS OF NATIONAL INCOME WORK

I shall turn next to the major problems which, in my opinion, national-income estimation in this country faces. I shall deal with the general direction of national-income work first, with specific areas of research second, and statistical problems last.

1. *Integrated set of national accounts.*—The scope of national income work has been broadened significantly in the past 25 years. Traditionally, the major aim of this work was to provide measures of

total national output and of its breakdowns. More recently, the aim has become that of providing a systematic account of national-economic activity. Inasmuch as the production of output is a central feature of economic activity, the two aims are obviously closely related.

If the broader view is taken, extensive bodies of other statistical information that under the narrow concept seem unrelated to the national-income estimates appear to be really part of them. The idea immediately suggests itself that national-income accounting should serve as a meeting ground for the coordination of the definitional framework of a broad range of economic statistics as well as of the underlying primary data sources and estimating methods. I consider this idea very valuable. In fact, I would go further to say that some version of it must be the goal of all who have an overall interest in economic statistics.

2. *The United States experience.*—Unfortunately, little progress has been made in the United States toward the implementation of this idea. Input-output and money-flow statistics were permitted to develop with little serious attempt to integrate them with national-income statistics. As a consequence, there is now no simple way of using them jointly with national-income data. Even though our views may differ widely as to the relative merits of the three systems, I believe we can all agree that something has been lost.

Lest I be misunderstood, let me add that I am not unmindful of the difficulties involved in obtaining integration; all I submit is that a much better job than actually was done could have been done. The extent to which the systems have been integrated in some other countries provides, I believe, *prima facie* evidence in favor of my proposition.

Also let me emphasize that I do not mean to imply that all conflicts should necessarily have been resolved in favor of present national-income procedures. This is really an obvious point, but in view of the particular nature of my professional involvement it seems well for me to make it explicitly.

3. *Current problems.*—Turning to the present and immediate future I see two major areas of investigation in which this problem of coordination will loom large. They are the two areas in which further systematic development of the national-economic accounts is most urgently needed. The first is saving statistics. Intertwined as these are with income, expenditure, and investment, they are in principle part and parcel of the national-income accounts, and in practice they should be closely coordinated with them. I hope that the recent arrangement assigning to the Federal Reserve Board a role of leadership in this field will prove to be in harmony with the aim of fostering such coordination.

The second area is real product and productivity statistics. The National Income Division prepares the overall measure of real national product, but work on industry measures as well as on productivity is being undertaken largely by other agencies. It seems to me that this development also will raise major problems of integration.

4. *Organizational problems.*—If we subscribe to the goal of an integrated set of national economic accounts, we should examine earnestly how in practice we propose to make progress toward it. What type of organization is necessary for establishing an integrated program? What shall be the role of the various agencies in the sta-

tistical implementation of such a program? Specifically—a question in which I am very much interested personally—what shall be the place of the National Income Division in the overall scheme?

I do not think that we have as yet devised an organizational framework which will insure a systematic development of the national accounts. Interdepartmental committee work is helpful in promoting integration, but I doubt very much whether it provides an adequate solution. My skepticism stems essentially from the conviction that this type of organizational arrangement does not provide a sufficiently clear-cut center of responsibility and authority.

These organizational problems are difficult to resolve. Yet a workable solution of them is essential to further progress in national economic accounting work.

III. SPECIFIC AREAS OF WORK

The specific areas of research which, in my opinion, national income accountants should explore further, I have set forth in my paper for the 1955 income conference, already referred to, and in my detailed comments on the other conference papers.

1. *The area of agreement.*—My aim in the present statement is to make two brief remarks on the results of this conference. First, if you examine the record you will find that there was substantial agreement as to the basic desirability of most of the major proposals that were made for the improvement of the national income accounts. The points which tended to separate me from our critics were mostly practical considerations of statistical feasibility. The insufficient attention given to these considerations had in my opinion impaired the realism and cogency of some of the findings.

Let me single out some of the more significant issues on which, to my mind, there is substantial agreement.

First, as to the broad scope of the data, the value of the national income accounts would be greatly enhanced by the introduction of information relating to changes in financial assets and liabilities.

Second, further work needs to be done on capital formation, capital consumption, and saving.

Third, a classification of the various services provided by Government is urgently required.

In each of these areas we are ready and eager to go forward, and we would expect substantial results with only a moderate increase in the size of our staff. However, with the resources available to us at present, which I shall review later, progress will necessarily be very slow. The job of maintaining our current output of statistics absorbs most of our energies.

Next, I should like to comment on two other issues on which similar agreement does not exist and further clarification is needed.

2. *The Government controversy.*—The first is the Government controversy. Our present procedure of including all Government purchases of goods and services in gross national product has been criticized on the ground that not all such purchases are final. According to a large body of opinion, some Government purchases should be excluded from gross national product as being akin to purchases of raw materials and semifinished goods. I believe that our present procedure is correct.

This subject has been discussed intensively in the literature prior to the 1955 income conference. The present statement is not the medium for sorting out once more the pros and cons of this complex argument, but I should like to indicate the course that I believe future action should take. As long as there is so much disagreement on the subject, I think it ought to be pursued further. Recent argument in favor of the exclusion of Government intermediate output has proceeded mostly on a purely theoretical level, and in such general terms that it has not led to a systematic listing of the Government services that are to be excluded as intermediate. In addition, proponents of exclusion differ widely from one another. Some stake out wide areas—for instance, the entire range of defense expenditures; others adduce only rather insignificant examples—seed distributed free to farmers by experimental agricultural stations, for instance. In view of this state of affairs, I think that at the present juncture the most significant contribution to the discussion would be for proponents of the idea to prepare for a set of years an actual empirical classification of Government services into final and intermediate.

I would go one step further and suggest that the National Bureau of Economic Research undertake the task. The guiding spirits of the bureau have been the most vocal in stating the general case for the elimination of Government intermediate product, and in calling for its statistical implementation as a matter of signal theoretical and practical interest. And, needless to say, the bureau is singularly well equipped with the professional competence needed to undertake the job.

I do not believe that the task is one for the National Income Division. In the first place, proponents rather than opponents of the proposal should work on it. This is the only procedure that holds the promise of a creative result, and the one that will give the proposal the fairest chance. Secondly, I would point to the controversial state of the subject matter. Given the limitation of resources available for official national income work, other projects that will pay off with much more certainty in significant contributions to economic analysis should have overriding priority, to my mind.

3. *Entrepreneurial saving*.—The second proposal on which I should like to comment is that the national income accounts be made to show the saving of unincorporated enterprise separately from other personal saving. I agree completely with the view that information on this subject is of great importance. But it is not clear in what form and manner it can be obtained. The aim of measurement can be, alternatively, the total saving of entrepreneurial families, or the saving which entrepreneurial families make in a business as distinguished from a personal capacity. I think it is very important to distinguish clearly between these two variants. As I have explained in my income conference paper, I am strongly inclined toward the former. The latter appears to me to be a somewhat artificial abstraction, because most entrepreneurs do not themselves distinguish clearly between their business and personal finances.

The practical implementation of the definition I favor raises data problems of even graver complexity than does the implementation of the alternative one. I think that any proposal for the segregation of entrepreneurial saving should make explicit reference to these problems. Otherwise, an unduly simple view of the project is suggested

to those who are not acquainted with the data problems. It should be recognized clearly that the segregation of the saving of entrepreneurial families is not something the National Income Division as it is constituted now can accomplish by itself. A basic statistical program reporting on the finances of entrepreneurial and other families is a *sine qua non*. Not even the blueprints of such a program have been worked out satisfactorily.

IV. IMPROVING THE RELIABILITY OF THE ESTIMATES

I have been shifting from a discussion of conceptual problems to one relating to statistical matters, and I should like to make a few remarks about the latter subject explicitly.

1. *Present statistical system.*—Collection of primary statistical data in this country is not designed specifically to meet the needs of national income measurement. We have no integrated reporting system that yields directly the various entries in the national accounts. Instead, these entries must be derived from a multitude of primary sources—census and sample surveys, administrative statistics such as social security, tax, and budget data, and many other public and private records.

The information provided in these sources falls short of the requirements of national-income accounting definitionally and in coverage. Consequently, the actual entries in the national accounts must be derived from the primary data by estimating methods that are often lengthy, indirect, and complex, and that call for the exercise of a wide latitude of judgment when basic data are lacking or conflicting.

In the present organizational framework, the specific function of the National Income Division is this processing of primary data. Only to a very minor extent are we engaged in their collection.

Impressed by the obvious disadvantages of the present procedure, it has occurred to some that a new start is called for. What is boldly envisaged is a single unified reporting system of census-type enumerations and sample surveys which would provide directly the magnitudes required for the national accounts. I believe that such a system will remain a dream for the foreseeable future. It is not practical because it would involve a staggering volume of outlays if it were designed to yield results as satisfactory as or better than those we now obtain.

To my mind, further progress on the statistical front will be made by improving rather than replacing the sources and methods that now exist. If this is the outlook, the question arises whether further improvement is to be gained by strengthening the primary data or the estimating processes that rest on them.

2. *Data collection.*—I think the broad proposition that must be established first is that major improvements in the reliability of national-income statistics depend on the improvement of the primary data sources. The memorandum I have prepared for your committee outlines the major areas in which more and better information is needed.

3. *Estimating methods.*—But once this broad proposition has been made, it should be immediately qualified. An addition to the present strength of the National Income Division is also required. In terms of the total improvement of national-income estimates such personnel increases would yield results less striking than would a program aimed

at strengthening the basic data. But the funds needed for building up the Division are comparatively so trifling that viewed as a rate of return on investment the improvement which such action would bring about might be as impressive as that resulting from improved data collection.

Let me review the position of the National Income Division in a little more detail. On a net basis, the Division now turns out a larger volume of monthly, quarterly, and annual statistics than it has ever done in the past, and it does so on a schedule that has been accelerated considerably over the years. Also, according to my judgment, the quality of the estimates has been maintained or improved. This situation obtains in spite of a cut in staff amounting to between 15 and 20 percent over the past few years. What is the explanation?

In the first place, the National Income Division has an extremely devoted staff that performs far beyond the call of duty. But there are limits on the extent to which one can call for such gratuitous contributions. Secondly, to an increasing extent we have had to postpone repair and maintenance work on our series. So far the results of this second factor have not been perceptible, I believe. We all know that repair and maintenance are postponable to some extent. But this type of retrenchment cannot be continued indefinitely. Cumulatively, it is apt to lead to serious breakdowns. Next, we have not had the resources to experiment sufficiently with alternative estimating procedures for various components of the national accounts; nor have we been in a position to institute certain improvements in our methods of which we are aware. Finally, we have not been able to engage upon broad developmental work.

You may admit that this last circumstance is regrettable per se, but question its relevance to the improvement of our existing estimates. Actually there is an important and close link. The exploration of new areas tends to throw light on the situation in old ones. For instance, it was the cross-checks inherent in the novel interindustry studies that first suggested convincingly a downward bias in the conventional construction statistics. Similarly I would hope, for instance, that the establishment of a set of saving-investment accounts for the various sectors of the economy via direct estimates of changes in assets and liabilities would provide checks on the accuracy of our income and product estimates which would prove as useful as those now provided by the alternative calculation of national output in terms of income and of product flows.

If all these features of our recent work experience are taken into account, it will become obvious that an expansion in the staff of the National Income Division is called for; and that such an expansion would carry a clear return quite independent of that which would be yielded by an improvement in the primary data.

4. *The use of imperfect statistics.*—Having presented the case for the improvement of our estimates, I should like to close with some remarks addressed to a defense of imperfect statistics. I believe that it is of crucial importance not to create excessive expectations as to the extent to which national income estimates can be made more precise; and to make clear that used skillfully they can be extremely valuable even if they are subject to moderate errors.

The output of our economy is now flowing at an annual rate in excess of \$400 billion. A \$1 billion error is less than one-fourth

percent of this aggregate. I believe that even with a substantial improvement in the flow of primary data, frequent errors larger than this amount would still be inevitable. This holds true especially for our current monthly and quarterly statistics, for obvious reasons. A less obvious one perhaps deserves explicit mention. Even if our various data sources were individually vastly improved, it is very unlikely that they could be sufficiently synchronized with each other to eliminate differences in timing such as will throw the national accounts somewhat out of gear when economic conditions are changing.

Under these circumstances, it seems to me that a task of almost coordinate importance to that of improving the data is that of educating the public in how to make the best use of estimates that are subject to error. First, they should be taught not to attach significance to indicated changes that are within the margin of error of the estimates. More important, and more difficult to show, is that the inherent nature of national income statistics as approximations does not rob them of their great usefulness. Appropriately interpreted, these estimates throw a powerful light on the economic situation, in spite of the error which they contain.

I have elaborated this point in an article in the May 1956 Review of Economics and Statistics. Briefly, my position is that if the various series that compose the national income accounts are used as joint evidence to interpret the economic situation—with some awareness of the deficiencies to which the various series are subject—a substantially correct and highly informative picture usually emerges. This picture is not likely to be profoundly altered by the kind of subsequent revision of the series that is likely to occur.

Needless to say, there are exceptions to this general proposition, and no complacency with the current state of national income statistics is implied. Nevertheless, it is important to point out that errors in gross national product or its components which are quite upsetting when the series are used to measure the exact pulse beat of a particular activity are apt to cause much less disturbance if the series are used in a coherent analysis of major business developments.

PART II. SUGGESTIONS FOR DATA IMPROVEMENT

This part of the memorandum contains suggestions for filling the major data gaps in the existing annual and less than annual income and product series prepared by the National Income Division, other than the regional and size distribution estimates. Discussion of a host of detailed problems is necessarily omitted, and new data requirements that might arise from changes in concepts or further extensions of national income work are not considered.

The major product and income series are taken up in turn. In general, under each heading benchmark estimates are discussed first and third extrapolations later. The descriptions of statistical methodology given in the 1954 National Income supplement are assumed as a background.

I. PERSONAL CONSUMPTION—COMMODITIES

1. *Integrated census program.*—The censuses of manufacturing and trade upon which the commodity-flow estimates rest should be taken

at regular intervals and if at all possible both should be taken at regular intervals and if at all possible both should be taken in the same years. There is no objection to partial substitutions of sample surveys for basic censuses, in the framework of an integrated plan.

2. *Distribution of manufacturers' sales.*—Information on manufacturers' sales distributed by class of customer, last collected in the 1939 census, is required to improve the allocation of manufactured commodities as between finished and intermediate products.

3. *Product detail.*—Allocation procedures would also be helped by more detailed product classifications based on specifications, packaging, or other characteristics which indicate whether products are used by households without further processing or become embodied in the output of other manufacturing establishments.

4. *Retail trade margins.*—Despite the wealth of data contained in the Federal income tax returns, trade margin information usable in our estimates is meager because the industry classification of the tax returns is not easily adapted to our estimates of detailed commodity groups. Wholesale trade margins in the breakdown in which we require them can be approximated reasonably well by combining detailed census data on operating expenses with tax return information on profits. But information on operating expenses has not been collected in recent retail trade censuses. Our data on retail trade margins are special tabulations prepared for us from time to time by the Census Bureau in cooperation with the Internal Revenue Service, and are admittedly deficient in quality. These data should be improved. The possibility of obtaining margin data by means of Census Bureau surveys might be reconsidered. This procedure could yield data for commodity classes rather than for kinds of business and would be better suited to our estimating procedure.

5. *Automobiles.*—There are some deficiencies in the price information relating to automobiles. But the main problem is the allocation of automobile purchases between personal and business use. A fixed percentage is now used, derived from traffic surveys relating to mileage driven for various purposes in the 1930's. This procedure can be improved by the incorporation of the results of newer traffic surveys that are now becoming available, and will yield good approximations for the allocation of automobile operating expenses. But a truly satisfactory allocation of auto purchases is not possible without regular data on net purchases by various purchaser groups. These data might be secured in connection with the Office of Business Economics—Securities and Exchange Commission plant and equipment, and the Federal Reserve Board surveys of consumer finances. Inasmuch as the proportions of consumer and business use vary, this information is required not only for benchmark years but for making the current estimates as well.

6. *Business expense accounts.*—Some expenditures for consumer-type commodities (mainly purchased meals and beverages) are charged to business expense. A special allowance has to be made for these expenditures in reconciling the income and product flow estimates of the national output. Exploratory work should be undertaken to determine whether business expense account data (or sellers' records) could be made available in a form that would throw light on the magnitude of these expenditures.

7. *Retail trading stamps.*—Information is needed to permit proper adjustment for the use of retail trading stamps, which have become important since 1947. This matter is more important for the establishment of benchmark estimates than for their extrapolation, since inadequate adjustment results in errors in the level of the former, whereas errors in the extrapolation of the commodity detail tend to be offsetting in the aggregate.

8. *Retail sales extrapolation.*—The extrapolations of the commodity-flow benchmarks are based largely on retail sales data by line of trade; these data do not lend themselves to an accurate estimate of detailed commodity composition. The feasibility of collecting key commodity information in connection with the retail trade survey of the Census Bureau should be explored.

9. *Annual commodity flow estimates.*—The possibility of making annual estimates by an abbreviated commodity-flow method is being studied. These would serve as partial substitutes for the extrapolations based upon retail sales. These estimates would probably require somewhat greater commodity detail in the Annual Survey of Manufactures, and annual margin information comparable to that needed for the benchmark estimates.

10. *Reconciliation of estimates based upon censuses of manufactures and retail trade.*—A basic statistical problem in this area warrants further research: consumer commodity aggregates estimated by the commodity-flow method (involving a buildup from the manufacturing census) are much higher than estimates based directly on the retail trade census. (N. B.: The latter must not be confused with the estimates referred to in point I.8 in which retail sales data are used only as extrapolators.) Information should be developed to facilitate the analysis of this discrepancy. Provision in the retail trade census of commodity breakdowns as detailed and as comparable as possible with the commodity breakdowns of the manufacturing census would be a significant step in this direction, but other techniques should also be explored.

II. PERSONAL CONSUMPTION—SERVICES

1. *Comprehensive census program.*—Census enumerations in this area should be extended and regularized.

2. *Allocation problems.*—Allocation problems analogous to those mentioned in connection with commodities (see point I.6) arise in connection with services, and an attempt should be made to tackle them by similar techniques.

3. *Current sample surveys.*—The Census Bureau program for obtaining annual sample information on services should be resumed and extended, and consideration should be given to the possibility of collecting data on a less than annual basis.

III. PERSONAL CONSUMPTION—CONSTANT-DOLLAR ESTIMATES

1. *Item coverage.*—The National Income Division has compiled a list of items of personal consumption for which price information is at present lacking or inadequate.

2. *Geographic coverage.*—Many of the Bureau of Labor Statistics item indexes used are based on a subsample of only 14 cities in the Consumer Price Index. It would be desirable to obtain this information for the 46 cities used in the Consumer Price Index.

3. *Commodity specification.*—The Department of Agriculture price series used to deflate the rural portions of consumer purchases are not based on uniform product specifications and therefore fall short of the standards that are usually regarded as desirable in price index number design.

IV. NEW CONSTRUCTION

1. *A comprehensive new program.*—A program for a basic improvement of construction statistics is being formulated by the agencies compiling them, and consequently this matter is touched upon only briefly in this memorandum. Aside from strictly statistical matters of coverage, valuation, and timing, important semi-conceptual problems affecting the consistency of the national income accounts will need to be dealt with. These include the distinctions among construction, equipment, and repair and maintenance expenditures, and the handling of so-called speculative profits, mainly in private residential nonfarm construction, which are omitted from the present data. It seems important that in any new plans that may be formulated the requirements of the national income accounts should be fully considered.

2. *Legal form breakdown of investment.*—To improve the estimates of personal saving derived from changes in personal assets and liabilities, an improved breakdown of investment by legal form of ownership is required. The information might be obtained partly from the construction estimates and partly by exploiting further the potentialities of the Commerce-Securities Exchange Commission plant and equipment survey (discussed hereafter). The requirement for a legal form breakdown of inventory holdings should be kept in mind in connection with the series used to extrapolate the inventory benchmark estimates (also discussed later).

3. *Constant-dollar estimates.*—The available price indexes for new construction refer to cost prices and are therefore inappropriate for the deflation of the current dollar estimates, which are generally in terms of selling prices. Moreover, even as cost indexes, the measures, prepared largely by private companies, seem outmoded, insofar as can be established from the rather incomplete descriptions that are available of their underlying methodologies. The initiation of an up-to-date program for measuring construction prices, which will tackle the difficult problems that arise in this area, strongly suggests itself.

V. PRODUCERS' DURABLE EQUIPMENT

1. *Integrated census program.*—The commodity flow method for estimating consumer commodities is also the principal one used for estimating producers' purchases of durable equipment. Accordingly, the requirement for an integrated census program noted above in connection with the former series holds also the latter.

2. *Allocation problems.*—The main allocation problem is to distinguish complete items that are included in gross capital formation from parts that are not. An expansion of the materials-consumed data of the census of manufactures to include all principal equipment-type items would be of substantial assistance in solving this problem.

Similar surveys for selected nonmanufacturing industries would also be needed.

3. *Government purchases.*—These purchases must be deducted in arriving at private capital formation. They present a substantial problem because they are a significant and variable proportion of the total. The necessary information might be obtained from the records of the purchasers or of the sellers. The data from Federal Government sources now available are deficient in coverage, timing, and classification (by type and as regards the distinction between complete items and parts). The State and local data assembled by the Census Bureau are deficient mainly as to classification. Alternatively, the information might be obtained from sellers' records by expanding the census of manufactures (and the annual surveys) to include a question relating to sales to government. There are difficulties involved in this approach but they should not be insuperable. Corresponding information from wholesale trade would also be needed.

4. *Information on wholesale margins.*—Given appropriate information on Government purchases the annual surveys of manufactures could be used to bring the census-based benchmark estimates closer up to date. In connection with this method, annual information on operating expenses of wholesalers of equipment items would be desirable in order to estimate wholesale margins. This information might be obtained in connection with the Census Bureau annual wholesale trade report if publication of that report were resumed.

5. *Other information.*—To bring up to date estimates based upon the census of manufactures and on the annual surveys of manufactures (or also as a substitute for the latter) two procedures should be considered: First, procurement of selected type-of-commodity and type-of-purchaser information in connection with the Office of Business Economics industry survey, so that the sales data in that survey can be used as extrapolators; and second, a strengthening of the Commerce-Securities Exchange Commission plant and equipment survey to yield separate data on equipment purchases. The present method of extrapolating the benchmarks involves in essence a residual estimate of equipment purchases by the combined use of the plant and equipment survey and the Business and Defense Services Administration construction data, and it is a makeshift mainly because of the definitional and statistical noncomparabilities between the two sources.

6. *Constant-dollar estimates.*—Additional price information for many categories of producers' durable equipment not covered in the BLS wholesale price index would improve the deflated figures.

VI. CAPITAL CONSUMPTION ALLOWANCES

1. *Depreciation charges.*—Improvement of these estimates would be along the lines suggested later in this memorandum, in connection with corporate profits and entrepreneurial income. The special internal-revenue service tabulations of sole proprietorship and partnership returns should carry the depreciation item regularly.

2. *Capital outlays charged to current expense.*—Information specified in connection with the allocation of producers' durable equipment (see point V. 2) would be used to improve our estimates of this item also.

3. *Accidental damage to fixed capital.*—Improvements are desirable both in the accuracy of the basic data and in their classification by type of property.

VII. CHANGE IN BUSINESS INVENTORIES—BOOK VALUES

1. *Speedup of Internal Revenue Service tabulations.*—Within the framework of the present methodology, a speedup of the Internal Revenue Service tabulations is the first requirement. (This statement is not intended to prejudice the suggestion that a switch to census-based benchmarks should be explored, mainly because the latter information is on an establishment rather than on a firm basis.) The proposed Internal Revenue Service tabulations of the business indicator series would go far toward meeting our requirements.

2. *Unincorporated enterprise.*—Tax return information on the inventory holdings of sole proprietorships has not been tabulated since 1945. Tabulation of this item should be resumed. Alternatively, census information relating to unincorporated enterprise inventories needs to be strengthened. (See earlier comments relating to the need of an integrated, regular census program in connection with the consumer commodity and producers' durable equipment estimates.)

3. *Retail inventories.*—As regards the extrapolating series, a strengthening of retail inventory statistics to take adequate account of small independent retailers is the main requirement.

4. *Inventories outside manufacturing and trade.*—The quarterly Securities Exchange Commission tabulations of current assets and current liabilities of United States corporations are now not in time for the current quarterly national product estimates. Accordingly, these estimates do not reflect inventory changes outside manufacturing and trade. Lack of coverage of the noncorporate area outside manufacturing and trade probably does not constitute a significant deficiency, as compared with the other shortcomings of the inventory figures.

5. *Inventories in transit.*—Inventories in transit tend to disappear from the accounts. The possible magnitude of the consequent distortion in the change of inventories figures should be investigated. Information on accounting methods, on the mail float of commercial documents, and on the volume of goods in transit is relevant.

VIII. CHANGE IN BUSINESS INVENTORIES—DEFLATION AND REVALUATION

1. *Inventory accounting methods.*—Better knowledge of the accounting methods actually employed by business is required. Our present procedures for revaluing the book data are based on rather broad assumptions as to the valuation methods these data reflect. We need more information as to the extent to which Fifo, Lifo, average cost, specific identification, and other methods are used by businesses. It would also be helpful to find out more about the application of the lower of cost or market rule. Information would be desirable also relating to the scope of the cost elements included in the valuation of inventories, e. g., the extent to which overhead costs are included. This information would aid in the construction of the more appropriate price indexes. The extent to which standard cost valuation is used in the reporting of inventories should also be investigated.

It would be premature to try to be precise at this time as to whether the foregoing type of information should be in the form of periodic surveys of accounting methods, or whether, and to what extent, it should be implemented by a regular reporting of book value data classified to distinguish the several underlying accounting methods.

2. *Commodity composition.*—Additional information on the commodity composition of inventories would be of great value in the deflation of the non-LIFO inventories, by making possible a more selective use of the available price-index information. It would also facilitate the requisite LIFO estimate since the method is characteristically used for only certain types of inventories in some industries.

3. *Price data.*—For inventory deflation purposes price data should be combined into group indexes which represent industry groupings rather than commodity groupings, and should be weighted by the commodity composition of inventories in each industry rather than by sales. In addition, the price indexes should be constructed so as to permit measurement of the prices of purchased inventories at the transaction stage at which they are acquired by the inventory holder. Also, the possibility of developing special indexes to measure the manufacturing costs reflected in the valuation of goods in process and finished product inventories should be explored. Finally, there are indications of seasonal variations in the commodity price data utilized in the deflation procedure; these should be examined and quantified, possibly by the Bureau of Labor Statistics.

IX. NET FOREIGN INVESTMENT

1. *Timing.*—The timing of foreign trade statistics should be adjusted on the basis of sample surveys from the time of loading or unloading or crossing of the border, to the time title to the goods changed.

2. *Valuation.*—Further study is required of the differences between the valuation of merchandise in the trade statistics and in actual payments. A past survey of imports should be repeated and extended to exports.

3. *Speedup in reporting.*—A speeding up in the compilation of merchandise trade data is desirable to provide information in time for the current quarterly product estimates.

4. *Constant-dollar estimates.*—The volume and unit-value estimates should be reviewed mainly because of large gaps in the commodity coverage and because the linking procedures used are not consistent with the fixed base period that underlies the deflation of gross national product in general. It might be worthwhile to initiate the systematic compilation of price data (or direct quantity data) relevant to the measurement of the real volume of nonmerchandise items.

X. FEDERAL GOVERNMENT PURCHASES AND TAXES

1. *Basic recasting of Government accounts.*—It is probably unrealistic envisage a basic recasting of Treasury and Budget Bureau data on Government expenditures and receipts which in coverage, classification, and timing would be a close approximation to the Federal Government sector as defined best for a system of national accounts. The following recommendations are more limited.

2. *Timing of Government checks.*—Government expenditures are reported both on a checks-issued and on a checks-paid basis. From the standpoint of national income accounting neither is strictly appropriate. In particular, it would be important to measure checks made out to business as of the date they are received by business. A study of the characteristics of the float of Government checks might permit the estimation of an adjustment factor. Such a study might also indicate whether items other than the float cause discrepancies between checks-issued and checks-paid reporting.

3. *Receivables and prepayments.*—The Treasury series include prepayments for goods and services scheduled for delivery in future accounting periods, payments for goods and services that have been delivered in past accounting periods, and do not reflect current deliveries for which Government payments have not yet been made. When Government expenditures are changing rapidly this may cause significant discrepancies with the business records on which the other entries in the national accounts are based. At present an adjustment is made utilizing Securities Exchange Commission-Federal Trade Commission data on changes in business receivables and prepayments from Government. However, the financial reports of the corporations filing with the two agencies do not follow uniform accounting procedures, so that adjustments to the data as reported must be made, and the data are not available in time for the current quarterly estimates. As an alternative to these data, the Department of Defense, whose transactions give rise to the major timing discrepancies under this heading, may be able to devise a means of procuring the required information.

4. *Renegotiation.*—More information is needed on the magnitude of the funds recovered by contract renegotiation, and some basis provided for their allocation to the periods to which the contracts involved pertain.

5. *Classification of expenditures.*—An improved classification of expenditures would also make it possible to improve the synchronization of our series. For instance, if Government wage and salary payments were distinguished in the expenditure records, we could make sure that the timing of these payments is the same as that of the corresponding entry in the income accounts, which is based on different source data. Similar comments apply to transfer payments and some other items.

6. *Federal taxes.*—Federal tax data, basically fairly adequate, have been subject to increased delays in reporting. The individual income-tax estimates could be improved by having a telegraphic report for the third month of each quarter similar to the report prepared in June for the fiscal year. A speedup in the reporting of excise taxes would help in the estimation of current indirect business taxes. In addition, the individual income-tax estimates could be improved by a reporting of their collections separately from the collection of old-age and survivors' insurance employment taxes (as was done prior to 1951).

XI. STATE AND LOCAL GOVERNMENT PURCHASES AND TAXES

1. *Timing of Census Bureau reports.*—Data based upon census and annual survey data of the Bureau of the Census are subject to varying lags. The report on local government receipts and expenditures is received in August, 1 month after the national income number of the

Survey goes to press. It would be helpful if segments of the report, notably the summaries on taxes and construction and operating expenditures, could be made available in time for the July deadline.

2. *Current quarterly expenditure information.*—Quarterly data comparable to those published in the Census Bureau reports on an annual basis are not available. The existing information for making the estimates is incomplete. We understand that a program of quarterly reporting is under consideration in the Census Bureau. Such a program should be encouraged. It may also be noted that quarterly data would facilitate a more accurate statement of the calendar year totals of local government units. At present the reported receipts and expenditures of these governmental units are treated as occurring in the calendar year in which their fiscal periods end.

3. *Receipts.*—For the benchmark estimates a reporting of non-tax receipts and certain taxes in greater detail would provide a more satisfactory basis for allocating them between persons and business firms. Quarterly reporting of government receipts would also be desirable.

XII. CONSTANT-DOLLAR GOVERNMENT PURCHASES

Information on the product breakdown of purchases and on the prices applicable to these breakdowns is deficient. The information on product breakdowns should be improved and the development of price indexes applicable to government should be considered, at least in such critical areas as defense purchases where the construction of quantity and price index numbers is especially difficult.

XIII. WAGES AND SALARIES

1. *Individual industry estimates of wages and salaries.*—Our basic estimates of wages and salaries in most private industries come from reports of total payrolls covered by the unemployment insurance program. To the reported amounts we apply "small firm raising ratios," which raise the figures to include payrolls of firms too small to be included in the unemployment insurance program. It would be desirable to have up-to-date small firm raising ratios. Those we are using are based on an old-age and survivors' insurance study of the first quarter of 1951. We can also specify improvements in the data we obtain on payrolls of employees excluded from, or only partially covered by, social-security programs. This applies especially to domestic, nonprofit institutions, military, and State and local government payrolls.

2. *Control total for wages and salaries.*—We adjust the sum of the original industry estimates to a control total. Our present method of combining old-age and survivors' insurance and unemployment insurance data into a control total has been weakened since the two systems have become noncomparable as to taxable wage base and industry coverage. It is conceivable that a satisfactory control total might be obtained by adding up the employers' copies of income tax withholding slips. It is important that the National Income Division be consulted in the formulation of any plans for the tabulation of these data.

3. *Bureau of Labor Statistics extrapolators.*—The Bureau of Labor Statistics payroll data used to extrapolate the benchmark estimates

have been highly accurate in general, but ways of strengthening them further should be explored.

XIV. SUPPLEMENTS TO WAGES AND SALARIES

1. *Internal Revenue Service benchmarks.*—A speedup of Internal Revenue Service data would improve our benchmark estimates for employer contributions to private pension plans.

2. *Private pension and related plans.*—Data are needed on the large and growing area of employer contributions to private pension, health and welfare, group insurance, and supplementary unemployment benefit plans. Proper benchmark information is lacking for some components, and the data available for making current estimates are generally poor. In addition, there is some risk of duplication when, as is now the case, a wide variety of source information is used to derive an estimate for a closely related group of items. The possibility of a unified approach to the estimation of these items on the basis of information that might be obtained either from tax returns or from a special survey should be explored.

XV. INCOME OF UNINCORPORATED ENTERPRISE ¹

1. *Benchmark estimates.*—The Internal Revenue Service furnishes us periodically with detailed tabulations relating to sole proprietorships and partnerships. This flow of information should be regularized and should cover both forms of legal organization for identical years. Inasmuch as census material is used also in deriving the benchmark estimates, the requirement for a regular, integrated census program, voiced earlier in this memorandum in connection with the consumption and investment series, holds for the income of unincorporated enterprise also.

2. *Speedup of Internal Revenue Service data.*—Some form of speedup of the Internal Revenue Service data is essential. The program for a special tabulation of Business Indicator Series from the income tax returns, which is now being proposed, would meet our requirements. (If this program does not materialize, the possibility of mining further the old-age and survivors' insurance data on the incomes of self-employed should be explored.)

3. *Current information.*—Even given the speedup of the Internal Revenue Service data that is feasible, we would be short of current quarterly and annual information. A sample survey of unincorporated business should be seriously considered to fill this gap.

4. *Internal Revenue Service audit control program.*—The audit control program of the Internal Revenue Service should be extended to partnerships and periodic surveys of both forms of legal organization should be made. There is also some scope for making the information collected somewhat better adapted to the needs of national income measurement.

XVI. RENTAL INCOME OF PERSONS

1. *Special Internal Revenue Service tabulations of cash rents.*—The cash component of the series could be made substantially more reliable

¹The estimates of the net income of farm proprietors which in the main are prepared by the Department of Agriculture are not considered in this memorandum. We may note that a speedup in the monthly series on cash marketings would permit a corresponding advance in the release date of our personal income series.

if certain special tabulations could be obtained from individual income-tax-return rent schedules. The figures for nonfarm cash net rents and net royalties are derived by indirect estimation of the corresponding gross receipts and expense deductions. Internal Revenue Service tabulation of such gross receipts classified by property type, and of receipts and expense items shown on complete rent schedules (i. e., schedules with both tax and depreciation entries) for each type, would provide a much better basis for estimating these series.

2. *Imputed rents.*—Gross imputed space rental value is now estimated from rental rate averages derived from the 1940 census and moved by reference to the Consumer Price Index rent index. The remoteness of the benchmark is particularly unfortunate in this case because since the early 1940's the rental market and, hence, the rent index have centered increasingly on multifamily housing, supply-demand conditions for which have clearly differed from those for owner-type dwellings. To correct the resultant weakness in the estimates, we need a new benchmark, such as might be derived now by inference from Bureau of Labor Statistics data on rented one-family units sampled in recent years for the Consumer Price Index, and later, from direct information on the rental value of owner-occupied units to be obtained in connection with the 1960 census. A subindex of the Consumer Price Index representing the nationwide movement of rental rates for one-family houses would also be needed to interpolate and extrapolate the benchmarks for the imputed rental estimates.

The data gaps in the current information on the housing inventory and on repair and maintenance outlays are also of considerable importance. Our knowledge of these items is materially strengthened, though far too seldom, by special surveys made in connection with the monthly report on the labor force sample. In addition, well-designed consumer expenditure surveys are helpful for deriving benchmarks also for various other expense items. Regular data on conversions and demolitions to complement the Bureau of Labor Statistics series on housing starts would be extremely valuable, not only for us but also for housing market analysis. (It may be noted that some of this information might be obtained in connection with the expansion in the research program of the Housing and Home Finance Agency that is now being formulated.)

3. *Other improvements.*—More frequent tabulation of the Internal Revenue Service proprietorship data, already mentioned in connection with the entrepreneurial income estimates, would improve the rental estimates also. Data to permit an allocation of property taxes among residential and other types of real property, which might be obtained in connection with the next census of State and local governments, would also be helpful.

XVII. CORPORATE PROFITS AND DIVIDENDS

1. *Speedup of Internal Revenue Service data.*—The earlier noted Business Indicator tabulations would meet our requirements.

2. *Audit control program.*—A systematic audit control program analogous to that for individual income-tax returns should be developed.

3. *Speedup of Securities Exchange Commission—Federal Trade Commission data for manufacturing.*—It would be desirable to obtain

a speedup of these data so that they are available for inclusion in the current quarterly estimates of the national income and product accounts.

4. *Extension of sample surveys to nonmanufacturing.*—Comprehensive current quarterly coverage of nonmanufacturing would be desirable, but trade and construction are probably the two industries on which information is most urgently needed.

5. *Firm versus establishment classification.*—Corporate profit estimates are classified industrially on the basis of the firm. This results in noncomparability with other income shares which are classified on an establishment basis. As a practical matter the distortion is seriously disturbing in the comparison of corporate payrolls and profits in a limited number of industries. Special tabulations now being prepared by the Census Bureau may provide a basis for making selective adjustments, or at least suggest what additional data necessary for this purpose might be made available.

XVIII. INTEREST

1. *Internal Revenue Service benchmarks and speedup.*—The most urgent needs from the standpoint of improving the interest estimates more frequent tabulations for sole proprietorships and partnerships and earlier availability of the Internal Revenue Service tabulations, particularly for corporations. It may be noted that the present plans for the Business Indicator series will not help us because interest items are not included.

2. *Other information.*—The figures on consumer interest could be made significantly more reliable if there were available a representative sample series on interest rates currently being paid. Similar information on residential mortgage interest rates is also needed. The Bureau of Labor Statistics has some interest in such series, in connection with the Consumer Price Index index.

APPENDIX F

PERSONNEL AND APPROPRIATIONS FOR WORK OF NATIONAL INCOME DIVISION, OFFICE OF BUSINESS ECONOMICS, UNITED STATES DEPARTMENT OF COMMERCE

TABLE F-1.—*Personnel and expenditures of National Income Division*

Fiscal year	Personnel				Salaries and expenses
	Average number	Year-end	Professional	Clerical	
1951.....	45.0	47	32	15	\$241,440
1952.....	44.0	44	30	14	253,665
1953.....	42.8	45	31	14	243,050
1954.....	36.1	38	26	12	229,000
1955.....	34.0	40	27	13	211,425
1956.....	38.0	37	24	13	237,173
1957 ¹	39.0	35	22	13	242,835

¹ Personnel figures are estimated as of June 30, 1957.